

A000DE4
RICHARD RUBENSTEIN - February 22, 2006

1 UNITED STATES DISTRICT COURT
2 FOR THE DISTRICT OF ALASKA
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5 KIMBERLY ALLEN, Personal
6 Representative of the ESTATE OF
7 TODD ALLEN, Individually, on Behalf
8 of the ESTATE OF TODD ALLEN, and on
9 Behalf of the Minor Child PRESLEY GRACE
10 ALLEN,

Plaintiff,

vs.

No. 304-CV-0131 (JKS)

11 UNITED STATES OF AMERICA,
12 Defendants.
13 -----/

14 DEPOSITION OF RICHARD A. RUBENSTEIN, M.D.
15 February 22, 2006
16

17 RICHMOND, CA
18

19 Reported by:
20 DANUTA KRANTZ
21 CSR NO. 4782

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<p>1 familiar with a subarachnoid hemorrhage 2 presentation? 3 A. Yes. 4 Q. Would you agree that emergency room 5 care providers should consider subarachnoid 6 hemorrhage when a patient presents with their head 7 hurting? 8 MR. GUARINO: Donna, that faded out. I 9 heard half of the question. 10 MS. McCREADY: Q. Would you agree that 11 the emergency room care provider -- sorry. Let me 12 start over. 13 Would you agree that emergency room care 14 providers should consider a subarachnoid 15 hemorrhage when the patient presents to the ER 16 with their head hurting? 17 A. I would not agree with that. 18 Q. Why not? 19 A. Because you didn't qualify the 20 question. You need to qualify the question and be 21 very specific. I mean, are you referring 22 generically, are you referring to Mr. Allen 23 specifically in terms of a patient who is a 24 chronic pain, chronic headache -- you know, he had 25 a long history of headache before this.</p>	<p>1 on, as opposed to someone who presented without 2 any prior history of headache, you know, as I 3 said, had a severe excruciating headache, 4 obviously then, the first thing you would think of 5 would be a subarachnoid hemorrhage. 6 Q. Would you agree that once a 7 patient -- assume for a moment there is a high 8 suspicion of a subarachnoid hemorrhage, would you 9 agree that the standard of care is then to order a 10 CAT scan? 11 A. Yes. 12 Q. Would you agree that a CAT scan, 13 generally, the sensitivity is that it will pick up 14 90 to 95 percent of bleeds? 15 A. About 95 percent of subarachnoid 16 hemorrhage, yes. 17 Q. Would you agree if that was -- if a 18 CT was negative, then you would go do a lumbar 19 puncture if you had a high suspicion -- index of 20 suspicion of a subarachnoid bleed? 21 A. If somebody presented with a 22 sentinel headache that was, you know, as I said, 23 arose basically de novo out of nowhere, severe 24 headache, the sequence of events certainly would 25 be a CT. If that was negative, then a spinal</p>
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<p>1 In someone who has chronic headaches, 2 who is on narcotic medication, patients who have a 3 preexisting history of headache as opposed to 4 someone who arrives in an emergency setting 5 de novo, you know, without any prior history of 6 headache, and has a severe, excruciating headache, 7 the worst headache they have ever experienced in 8 their life, you've got to be very specific. 9 In the one instance of a patient like 10 Mr. Allen, who was a chronic pain patient, chronic 11 headache patient, on narcotics, on a narcotic 12 contract, or somebody with preexisting migraine, 13 frequent migraines, et cetera, in other words, a 14 chronic headache patient, certainly someone who 15 presents in an emergency room, the diagnosis of 16 subarachnoid hemorrhage would not be high on my 17 differential. 18 Q. And the question is not whether or 19 not it's high on the differential. Should it be 20 considered? 21 A. I don't even think it needs to be 22 considered, you know, unless there is something 23 that is sufficiently atypical about the 24 presentation that would warrant an elevated level 25 of suspicion that there was something new going</p>	<p>1 fluid evaluation. 2 Q. At least in your experience and 3 your review of the literature, CTs pick up most, I 4 mean, 95 percent of bleeds? 5 A. Correct. 6 Q. Would you agree that, just in 7 general, talking about the -- 8 A. Let's say, CTs pick up about 95 9 percent of acute subarachnoid hemorrhage if done, 10 you know, within the first 12 to 24 hours after 11 the bleed. You know, by, let's say, five days 12 after the bleed, the sensitivity of the CT is 13 about 50 percent. 14 Q. Sure. But in at least that first, 15 did you say 24 hours? 16 A. 24 hours. 17 Q. Right. It's going to have a 95 18 percent sensitivity rate? 19 A. Correct. 20 Q. I just want to ask some general 21 questions about treatment of patients who are 22 diagnosed with subarachnoid hemorrhage. 23 It sounds like that is at least where 24 your area of expertise is. You worked in terms of 25 treating patients with subarachnoid hemorrhage?</p>

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1 A. Yes.

2 Q. Would you agree that one of the
3 primary goals of treatment of somebody who has
4 been diagnosed with a subarachnoid hemorrhage is
5 to prevent a rebleed?

6 A. Yes.

7 Q. And also to prevent, if I'm
8 pronouncing it correctly, vasospasm?

9 A. Yes.

10 Q. Is that how you would say that,
11 vasospasm?

12 A. Yes. Delayed cerebral ischemia.

13 Q. What exactly is that?

14 A. That is where there is spasm of the
15 blood vessels. The mechanism is unclear, but it
16 seems to be related to the volume of blood that is
17 in the subarachnoid space and the clots that are
18 in the subarachnoid space. In other words, how
19 bad the hemorrhage is. And so the delayed
20 cerebral ischemia is either a focal or multifocal
21 process that can cause brain infarctions and
22 strokes, et cetera.

23 Q. All right. What is the standard of
24 care -- once a patient has been diagnosed, let's
25 say, they have been diagnosed with a subarachnoid

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1 know, other anticonvulsants.

2 And so that would be really the acute
3 management of the subarachnoid hemorrhage.

4 Q. I want to follow up on a couple of
5 the things you mentioned.

6 A. But by the way, that would not
7 encompass, which it may well encompass, that at
8 the time that the subarachnoid hemorrhage was
9 documented on the imaging study, the CT scan,
10 presuming the patient was reasonably stable, in
11 other words, there wasn't any pulmonary
12 neurogenic, pulmonary edema or other causes, you
13 know, and cardiac, he was at least stable, no
14 striking metabolic abnormalities, seizures were
15 controlled, if any, and the other medications were
16 induced, you know, obviously, he would then go to
17 have an angiogram.

18 In tertiary care medical centers or good
19 community hospitals, the real study of choice is a
20 CTA, computerized tomographic angiogram now.

21 And --

22 Q. Was that the case in 2003 as well?

23 A. No. I am just saying what the case
24 is. We are not dealing with a hospital that had
25 those kind of facilities. But then would be

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1 bleed on CT scan, what then is the standard of
2 care in terms of treating the patient?

3 A. Well, aside from securing an
4 airway, you know, making sure they are ventilated
5 properly and that they don't have any other acute
6 complications, such as pulmonary edema, cardiac
7 arrhythmias that need to be treated, electrolyte
8 imbalances, you know, metabolic abnormalities,
9 then is to treat the subarachnoid hemorrhage
10 certainly by the acute CT scan; is there anything
11 surgically emerging, do they have -- do they need
12 an EVD, external ventricular drain, to drain
13 intraventricular blood or ventricular blood, or do
14 they have a, you know, a big hematoma with
15 herniation that needs to be, let's say, addressed
16 by surgical evacuation.

17 Absent that, then they need to be
18 admitted to a neurointensive care unit. They need
19 to have their blood pressure monitored, not
20 necessarily treated. They need to be started on a
21 calcium channel blocking drug called Nimodipine.
22 They need to be prevented or be put on medicine to
23 reduce a stress ulcer. Most people would treat
24 with anticonvulsants for at least seven days after
25 the subarachnoid hemorrhage, Dilantin or, you

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1 addressing this aneurysm with perhaps endovascular
2 coiling, you know, versus a surgical procedure to
3 ablate the aneurysm.

4 Q. Let me follow up on a couple of
5 things you said before in terms of you put the
6 patient in the neurointensive care unit, and you
7 would monitor blood pressure. You wouldn't
8 necessarily treat it unless it became a problem;
9 is that correct?

10 A. Well, blood pressure is not treated
11 in a subarachnoid hemorrhage. If blood pressure
12 gets too low, hypertensive agents are given.
13 Generally, you know, blood pressure in
14 subarachnoid hemorrhage, you know, is maintained
15 at the upper limits between, let's say, 180 to 220
16 systolic, because you want a significant head of
17 pressure going to the cerebral vasculature to
18 really prevent vasospasm, delayed cerebral
19 ischemia. That is one of the triple H therapies
20 that has been shown to prevent vasospasm.

21 So, of course, if blood pressure goes
22 sky high, obviously, you have to treat it. But
23 hydration and hemodilution are the other two H's
24 of the triple H therapy that are specifically
25 designed to address the issue of delayed cerebral

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